

**Patent claims:**

1. A process for preparing isocyanoatoorganosilanes by thermolysis of carbamatoorganosilanes, wherein  
5 the thermolysis takes place by exposure to microwave radiation.
2. The process as claimed in claim 1, wherein isocyanoatoorganosilanes of the general formula  
10 (1) are prepared



where

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**R** is a monovalent C<sub>1</sub>-C<sub>10</sub>-alkyl radical,

**R**<sup>1</sup> is a divalent C<sub>1</sub>-C<sub>6</sub>-hydrocarbon radical and

20 **R**<sup>2</sup>, **R**<sup>3</sup> and **R**<sup>4</sup> are in each case independently of one another, a methyl, ethyl, n-propyl, isopropyl, methoxy, ethoxy, n-propoxy or isopropoxy radical,

25 by thermolysis of carbamatoorganosilanes of the general formula (2)



3. The process as claimed in claim 1 or 2, wherein  
30 the thermolysis takes place in the presence of a catalyst.
4. The process as claimed in claim 3, wherein the catalyst is in homogeneous form.
- 35 5. The process as claimed in claim 4, wherein as catalyst one or more compounds selected from the group consisting of soluble compounds of tin,

- 5        lead, cadmium, antimony, bismuth, titanium,  
zirconium, niobium, iron, cobalt, manganese,  
chromium, molybdenum, tungsten, nickel, copper and  
zinc, and soluble organic nitrogen bases, are  
used.
6.        The process as claimed in claim 4 or 5, wherein as  
catalyst one or more compounds selected from the  
group consisting of 1,4-diazabicyclo[2.2.2]octane,  
10        dibutyltin dilaurate, dibutyltin maleate,  
dibutyltin diacetate and dimethyltin dichloride  
are used.
7.        The process as claimed in claim 3, wherein the  
15        catalyst is in heterogeneous form.
8.        The process as claimed in claim 7, wherein as  
catalyst metals and/or compounds comprising  
elements selected from the group Sn(I), Sn(II),  
20        Pb(II), Zn(II), Cu(I), Cu(II), Co(I), Co(II), Na,  
K, Li, Rb, Cs, Sr, Ba, Mg, Ca, Cr, Mo, Ti, V, W,  
Ce, Fe, Ni, Si, Al, Ge, Ga, In, Sc, Y, La and  
lanthanides, Pd, Pt, Co, Rh, Cu, Ag, Au, Zn, Cr,  
Mo, W, Cd, Fe, N, O, B, C, or mixtures and alloys  
25        comprising the abovementioned elements are used.
9.        The process as claimed in claim 7 or 8, wherein as  
catalyst oxides, hydroxides, oxyhydroxides, mixed  
oxides, acetates, formates, oxalates, tartrates,  
30        citrates, nitrates, carbonates, or mixtures of the  
abovementioned compounds of one or more elements  
selected from the group consisting of Sn(I),  
Sn(II), Pb(II), Zn(II), Cu(I), Cu(II), Co(I),  
Co(II), Na, K, Li, Rb, Cs, Sr, Ba, Mg, Ca, Cr, Mo,  
35        Ti, V, W, Ce, Fe, Ni, Si, Al, Ge, Ga, In, Sc, Y,  
La and lanthanides, Pd, Pt, Rh, Ag, Au and Cd are  
used.

10. The process as claimed in claim 7 to 9, wherein as catalyst one or more compounds selected from the group consisting of  $\text{TiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{HfO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{BaO}$ ,  $\text{CaO}$ ,  $\text{MgO}$ ,  $\text{CeO}_2$ ,  $\text{La}_2\text{O}_3$ ,  $\text{Y}_2\text{O}_3$ ,  $\text{Sm}_2\text{O}_3$ ,  $\text{Yb}_2\text{O}_3$ ,  $\text{Cr}_2\text{O}_3$ ,  $\text{ZnO}$ ,  $\text{V}_2\text{O}_4$ ,  $\text{MnO}_2$ ,  $\text{NiO}$ ,  $\text{In}_2\text{O}_3$ ,  $\text{Ga}_2\text{O}_3$ ,  $\text{GeO}_2$ ,  $\text{FeO}$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{Fe}_3\text{O}_4$ ,  $\text{CuO}$ ,  $\text{Co}_3\text{O}_4$ ,  $\text{Fe}(\text{MoO}_4)_3$ ,  $\text{MgO/CsOH}$ ,  $\text{MgO/NaOH}$ , aluminosilicates, zeolites, cordierite of the composition  $2 \text{ MgO} \cdot 2 \text{ Al}_2\text{O}_3 \cdot 5 \text{ SiO}_2$ , heteropolyacids, carbon, transition metal nitrides, transition metal borides, transition metal silicides and carbides are used.
11. The process as claimed in claim 7 to 10, wherein the catalysts are applied to a support.
12. The process as claimed in claim 7 to 11, wherein as catalyst supports inert refractory materials are used.
13. The process as claimed in claim 7 to 12, wherein as catalyst supports oxidic and nonoxidic ceramics,  $\text{SiO}_2$ , carbon, aluminosilicates, magnesium aluminosilicates or resistant metallic materials are used.
14. The process as claimed in claim 7 to 13, wherein the catalyst supports are used in the form of irregular granules, spheres, rings, half-rings, saddles, cylinders, trilobes or monoliths.
15. The process as claimed in one or more of claims 1 to 14, wherein a gas-phase reactor containing a heterogeneous catalyst is inserted downstream of the microwave reaction chamber.